REMARKS

Claims 1-4 are pending in this application, with claims 1, 2 and 4 being independent. Independent claims 1, 2 and 4 have been amended. No new matter has been added by way of this amendment. The Applicants also appreciate the Examiner taking time out of his schedule to discuss the pending claims, some proposed amendments and this action with Mr. Jeffrey J. Barclay (Reg. No. 48,950), representative of the Applicants, on 3 July 2007. Favorable reconsideration of the action is respectfully requested in view of the foregoing amendments and following comments of the Applicants, which are preceded by related comments of the Examiner in small bold type:

Claim Rejections - 35 USC § 112

1. Claims 1 - 4 are rejected under 35 U.S.C. 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As suggested by the Examiner during the telephone conversation on 3 July 2007 with Mr. Barclay, independent claims 1, 2 and 4 have been amended. In particular, the preamble of claims 1 and 4 have been amended to include the term "advection" and claim 2 has been amended to include the phrase "to simulate advecting of the element".

Claim Rejections - 35 USC § 103

1. Claims 1 - 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gamito (Manuel Gamito et al.; "Two-dimensional simulation of gaseous phenomena using vortex particles", 1995, Computer Animation and Simulation '95", Springer-Verlag, 14 unnumbered pages) in view of Stam (U.S. Patent Number 6,266,071).

Amended independent claim 1 defines a method of simulating advection of elements through space. The method includes generating 2D grids. Each 2D grid is independent and has a number of grid points. The method also includes associating movement information with each grid point, and changing the movement information associated with the grid points over a time period that includes discrete intervals. The method also includes defining a region of 3D space using the 2D grids. The method includes advecting the elements through the region of 3D space

using the movement information associated with the 2D grids, and displaying the simulated advection of the elements.

Independent claim 1 has been amended such that each 2D grid is an independent entity, which are used to define a region of 3D space. Movement information associated with grid points of each 2D grid are used to advect elements through the 3D space.

In the action, the Examiner concedes that Gamito "does not specifically teach, advecting the plurality of elements through the region of 3D space using the movement information associated with the 2D grids". To cure this conceded deficiency of Gamito, the Examiner points to the abstract of Stam as teaching this limitation.

The Applicants disagree that Stam discloses or suggests advecting the plurality of elements through the region of 3D space using the movement information associated with the 2D grids, as required by amended independent claim 1. Rather than using two dimensional movement information to advect elements through three dimensional space, the reference describes performing three dimensional calculations to simulate fluid flow through a three dimensional grid. In this regard the Stam reads:

> "The animation method entails simulation of fluid flow, where the flow is modeled by a numerical solution of the Navier Stokes equations. The person developing the animation must first define a grid. The grid represents the volume in space through which the fluid flows. Each cell of the grid represents a discrete unit volume, or voxel, for which the velocity vector of the fluid in that cell is calculated. Velocity in any given cell is calculated by applying the Navier Stokes solver described below. The solver takes the velocity at an initial point in time t, then adds the effects of external force, advection, and diffusion over an interval Δt to determine velocity at time t+Δt. Iterating this calculation over time in each cell leads to the desired simulation of fluid flow in the overall grid volume. As will be described below, this process can be extended to model the propagation of heat and matter (e.g., dust or smoke) through the fluid, in addition to changes in velocity." (col. 3, line 65 to col. 4, line 15)

So, by calculating fluid movement in three-dimensional space, Stam provides a three-dimensional flow simulation. Thus, Applicants respectfully assert that Stam does not disclose or suggest advecting the plurality of elements through the region of 3D space using the movement information associated with the 2D grids.

For at least this reason, amended independent claim 1 is believed to be patentable. Amended independent claims 2 and 4 include limitations that are similar to those described

above with respect to claim 1. As such, independent claims 1, 2 and 4 are also believed to be allowable for at least the same reasons noted above.

The dependent claims partake of the novelty of their parent claims and, although it is believed that each dependent claim defines a separate patentable feature, for this reason the dependent claims are not discussed here in detail.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.
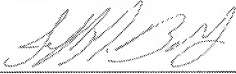
In view of the foregoing remarks, the entire application is now believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney can be reached at the address shown below. All telephone calls should be directed to the undersigned at 617-368-2191.

The Applicants believe that no fees are due, however, if any fees are in fact due, please apply all charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 20567-023001.

Respectfully submitted,

Date: _13 July 2007_

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